

REMARKS

Claims 5-8, 10-15, 17, 21-25, 27-29 and 31-56 are pending in this application. By this Amendment, claims 5, 8, 11, 13, 27, 29, 32 and 34 are amended to further distinguish from the cited references. Claims 20 and 35 are amended to address informalities based upon the amendment to claims 13 and 34. Claims 10, 17, 21, 22 and 31 are amended to address claim dependency issues. Claims 9, 16, 18-19 and 30 are canceled in this amendment and no further argument regarding these claims is presented herein. The specification is amended to address typographical errors.

Support for the claim amendments can be found throughout the original specification. Support for the amendments to claims 5 and 27 can be found at, for example, page 17, line 25 to page 18, line 11 and Fig. 3 of the original specification. Support for the amendments to claims 8 and 29 can be found at, for example, page 24, line 19 to page 25, line 3 and Fig. 14 of the original specification. Support for the amendments to claims 11 and 32 can be found at, for example, page 26, lines 3-12 and Figs. 17A and 17B of the original specification. Support for the amendments to claims 13 and 34 can be found at, for example, prior claims 16 and 18-20 and 35 and page 28, lines 8-18 of the original specification. No new matter is added.

I. Objection To The Drawings

The drawings were objected to for allegedly not showing a capacitor, as recited in claim 20. Applicants respectfully traverse this objection.

A pick-up coil 44 and a capacitor 45 are installed as shown in the vertical sectional view of Fig. 23. An example of this feature is shown in Fig. 23. The capacitor 45 is located close to the projected portion (shown as a portion of 16 above capacitor 45). Thus, the capacitor is shown being close to the projected portion.

The above amendments to the specification further explain this issue.

In view of the above, withdrawal of the objection is respectfully requested.

II. 35 U.S.C. §102(b) Rejections

A. Yamakoshi

Claims 5-7, 12-14, 16, 24-25, 27-28, 36-38, 41, 47, 50, 53 and 56 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Yamakoshi (U.S. Patent Application Publication No. 2001/0021422). Applicants respectfully traverse this rejection.

i. Claims 5 And 27 And Claims Dependent Therefrom

Amended claim 5 requires, among other features, that the RF antennas be disposed on each of the four sidewalls of the vacuum chamber and surround the vacuum chamber. This configuration of the antennas recited in claim 5 provides benefits, such as the possibility of providing a spatially uniform distribution of high-density plasma and the ability to control the type of ion species or radical species to be created. Yamakoshi does not describe at least these features of claim 5, or the benefits associated therewith.

Yamakoshi describes that the ladder electrode 303 (allegedly similar to the RF antennas of claim 5) is formed by assembling a plurality of parallel longitudinal rods 304 and one or more pairs of lateral rods 305 into the form of a lattice. See paragraph [0141] of Yamakoshi. However, Yamakoshi does not describe that the ladder electrode is disposed on each sidewall of the discharge plasma generating apparatus. Yamakoshi also does not describe that the ladder electrodes surround the plasma generating apparatus.

For at least the above reasons, Yamakoshi does not describe that RF antennas be disposed on each of the four sidewalls of the vacuum chamber and surround the vacuum chamber. Thus, Yamakoshi does not anticipate claim 5.

Claim 27, similar to claim 5, requires antennas being arranged on each of the four sidewalls of the vacuum chamber and surrounding the vacuum chamber. For at least the above reasons regarding claim 5, Yamakoshi also does not anticipate claim 27.

Claims 6-7, 24-25 and 36-38 depend from claim 5 and claim 28 depends from claim 27. For at least their respective dependency, and for the additional features recited, Yamakoshi also does not anticipate claims 6-7, 24-25, 28 and 36-38.

ii. Claim 12

Although not specifically rejected by the Patent Office, claim 11, similar to claim 5, requires three or more RF antennas provided on an inner wall surface of the vacuum chamber so as to surround an inner place of the vacuum chamber. For at least the reasons presented above, Yamakoshi does not describe three or more RF antennas provided on an inner wall surface of the vacuum chamber so as to surround an inner place of the vacuum chamber, as required by claim 11.

Claim 12 depends from claim 11. For at least its respective dependency, and for the additional features recited, claim 12 is not anticipated by Yamakoshi.

iii. Claim 13 And Claims Dependent Therefrom

Amended claim 13 requires features of claims 18-20, which were not anticipated by Yamakoshi. Thus, Yamakoshi does not describe at least the features of claim 13 that require (1) a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and (2) a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit.

In view of the above, Yamakoshi does not anticipate claim 13.

Claims 14, 41, 47, 50, 53 and 56 depend from claim 13. For at least their respective dependency, and for the additional features recited, Yamakoshi also does not anticipate claims 14, 41, 47, 50, 53 and 56.

iv. Conclusion

In view of the above, Yamakoshi does not anticipate claims 5-7, 12-14, 24-25, 27-28, 36-38, 41, 47, 50, 53 and 56. Withdrawal of the rejection is respectfully requested.

B. Masaji

Claims 11-16, 27, 32-33, 40-41, 43-44, 46-47, 49-50, 52-53 and 55-56 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Masaji (JP 2001-035697).

Applicants respectfully traverse this rejection.

i. Claims 11 And 32 And Claims Dependent Therefrom

Claim 11 requires, among other features, three or more RF antennas provided on an inner wall surface of the vacuum chamber so as to surround an inner place of the vacuum chamber, adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity. This feature of claim 11 provides benefits such as allowing for the possibility that an unintentional voltage between adjacent antennas does not arise and an equal plasma density can be provided. See, for example, page 10, line 24 to page 11, line 13 and Fig. 16 of the specification. Masaji does not describe at least this feature of claim 11, or the benefits associated therewith.

As described by Masaji, and shown in the Drawings of Masaji, adjacent electrodes of one or more pairs of adjacent RF antennas do not have the same polarity. For example, Drawing 11 of Masaji shows that adjacent electrodes of adjacent RF antennas have different polarities. Masaji also does not provide any discussion of the benefits of having adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity. Thus, Masaji

cannot provide the benefits of preventing an unintentional voltage from arising between adjacent antennas.

Masaji does not describe at least the feature of claim 11 that requires adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity. Thus, Masaji does not anticipate claim 11.

Similar to claim 11, claim 32 requires a plasma density distribution within the plasma generator to be controlled by giving an equal polarity to adjacent electrodes of one or more pairs of adjacent RF antennas. For at least the reasons presented above with respect to claim 11, Masaji also does not anticipate claim 32.

Claims 12, 40, 43, 46, 49, 52 and 55 depend from claim 11 and claim 33 depends from claim 32. For at least their respective dependency, and for the additional features recited, Masaji also does not anticipate claims 12, 33, 40, 43, 46, 49, 52 and 55.

ii. Claim 27

Claim 27 requires, among other features, antennas being arranged on each of the four sidewalls of the vacuum chamber and surrounding the vacuum chamber. Masaji does not describe at least this feature of claim 27.

Masaji describes an antenna conductor 5 installed inside a vacuum container 1 for the purpose of plasma generation, a stage located inside the vacuum chamber, and multiple antennas attached to sidewalls of the vacuum chamber and arranged parallel to the stage. See the Abstract and Drawings 1 and 11 of Masaji.

Masaji describes, at most, that three of the sidewalls have antenna conductors arranged thereon. See Drawing 11 of Masaji. Thus, Masaji does not describe antennas located on each of four sidewalls and that antennas surround the vacuum chamber.

For at least the above reasons, Masaji does not anticipate claim 27.

iii. Claim 13 And Claims Dependent Therefrom

Amended claim 13 requires the features of prior claims 18-20, which are not anticipated by Masaji. Thus, Masaji does not describe at least the features of claim 13 that require (1) a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and (2) a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit.

Claims 14, 15, 41, 44, 47, 50, 53 and 56 depend from claim 13. For at least their respective dependency, and for the additional features recited, Masaji also does not anticipate claims 41, 44, 47, 50, 53 and 56.

iv. Conclusion

In view of the above, Masaji does not anticipate claims 11-15, 27, 32-33, 40-41, 43-44, 46-47, 49-50, 52-53 and 55-56. Withdrawal of the rejection is respectfully requested.

III. 35 U.S.C. §103(a) Rejections

A. Masaji In View Of Yamakoshi

Claims 5-16, 23-25 and 27-56 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji in view of Yamakoshi. Applicants respectfully traverse this rejection.

i. Claims 5 And 27 And Claims Dependent Therefrom

As above, neither of Masaji nor Yamakoshi describe the RF antennas being disposed on each of the four sidewalls of the vacuum chamber and surround the vacuum chamber, as required by claim 5, and similarly claim 27. Further, the combination of Masaji and Yamakoshi does not provide any reason or rationale for one of ordinary skill in the art to have

come to the RF antennas being disposed on each of the four sidewalls of the vacuum chamber and surround the vacuum chamber, as required by claim 5, and similarly claim 27.

Thus, the combination of Masaji and Yamakoshi does not render obvious claims 5 and 27.

Claims 6-7, 23-25 and 36-38 depend from claim 5 and claim 28 depends from claim 27. For at least their respective dependency, and for the additional features recited, the combination of Masaji and Yamakoshi also does not render obvious claims 6, 7, 23-25, 28 and 36-38.

ii. Claims 8 And 29 And Claims Dependent Therefrom

Claim 8 requires multiple RF antennas arranged substantially parallel to the stage with the vacuum chamber, where an aspect ratio of an RF antenna at a position corresponding to a target area of the stage is larger than that of an other RF antenna so as to increase the plasma density or electron density at the target area.

Neither Masaji nor Yamakoshi describe, or provide any reason or rationale for one of ordinary skill in the art to have come to antennas having different aspect ratios. Further, the Patent Office alleges that "...according to the definition of the aspect ratio in the specification it is clear that aspect ratio determines the projection of the antenna towards the center of the substrate, it is obvious that the RF field ...will be oriented further in according to this projection." See page 5, lines 6-9 of the Office Action. The Patent Office is clearly employing an impermissible hindsight analysis to determine obviousness because the Patent Office is using the present application's specification to determine the allegedly obvious aspect ratios of claim 8. The Patent Office has not provided any reference that describes or provides any reason or rationale for one to have altered the aspect ratio of an antenna. Thus, the Patent Office allegations are based purely on impermissible hindsight, and the Patent Office rejection of claim 8 is improper.

Applicant respectfully requests the Patent Office to provide some reference, beyond the present specification, that would have allegedly rendered obvious the above features of claim 8.

In view of the above, the combination of Masaji and Yamakoshi does not render obvious at least the feature of claim 8 that requires an aspect ratio of an RF antenna at a position corresponding to a target area of the stage is larger than that of an other RF antenna so as to increase the plasma density or electron density at the target area, as required by claim 8.

Similar to claim 8, claim 29 requires an aspect ratio of an RF antenna located at a position corresponding to a target range of the stage is set to a larger value than that of other RF antennas so as to increase a plasma density or an electron energy at the target area.

For at least the above reasons regarding claim 8, the combination of Masaji and Yamakoshi also does not render obvious claim 29.

Claims 10, 39, 42, 45, 48, 51 and 54 depend from claim 8 and claim 31 depends from claim 29. For at least their respective dependency, and for the additional features recited, the combination of Masaji and Yamakoshi also does not render obvious claims 10, 31, 39, 42, 45, 48, 51 and 54.

iii. Claims 11 And 32 And Claims Dependent Therefrom

As discussed above, claim 11 requires, among other features, three or more RF antennas provided on an inner wall surface of the vacuum chamber so as to surround an inner place of the vacuum chamber, adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity. This feature of claim 11 provides benefits such as allowing for the possibility that an unintentional voltage between adjacent antennas does not arise and an equal plasma density can be provided. See, for example, page 10, line 24 to page 11, line 13 and Fig. 16 of the specification. Masaji does not describe, or provide any reason or rationale for one of ordinary skill in the art to have come to, at least this feature of claim 11.

As described by Masaji, and shown in the Drawings of Masaji, adjacent electrodes of one or more pairs of adjacent RF antennas do not have the same polarity. For example, Drawing 11 of Masaji shows that adjacent electrodes of adjacent RF antennas have different polarities. Masaji also does not provide any discussion of the benefits of having adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity. Thus, Masaji cannot provide the benefits of preventing an unintentional voltage from arising between adjacent antennas.

Yamakoshi also does not describe, or provide any reason or rationale for one of ordinary skill in the art to have come to, three or more RF antennas provided on an inner wall surface of the vacuum chamber so as to surround an inner place of the vacuum chamber, adjacent electrodes of one or more pairs of adjacent RF antennas having the same polarity, as required by claim 11. Thus, Yamakoshi does not remedy the deficiencies of Masaji and the combination of Masaji and Yamakoshi does not render obvious claim 11.

Similar to claim 11, claim 32 requires a plasma density distribution within the plasma generator to be controlled by giving an equal polarity to adjacent electrodes of one or more pairs of adjacent RF antennas. For at least the reasons presented above with respect to claim 11, the combination of Masaji and Yamakoshi also does not render obvious claim 32.

Claims 12, 40, 43, 46, 49, 52 and 55 depend from claim 11 and claim 33 depends from claim 32. For at least their respective dependency, and for the additional features recited, the combination of Masaji and Yamakoshi also does not render obvious claims 12, 33, 40, 43, 46, 49, 52 and 55.

iv. Claims 13 And 34 And Claims Dependent Therefrom

As above, amended claim 13 requires the features of prior claims 18-20, which neither Masaji nor Yamakoshi describe, or provide any reason or rationale for one of ordinary skill in the art to have come to, the plasma generator of claim 13.

Thus, the combination of Masaji and Yamakoshi does not render obvious at least the features of claim 13 that require (1) a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and (2) a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit.

Claim 34 requires similar features to the above-described features of claim 13. For at least those reasons presented above regarding claim 13, the combination of Yamakoshi and Masaji also does not render obvious claim 34.

Claims 14, 15, 41, 44, 47, 50, 53 and 56 depend from claim 13 and claim 35 depends from claim 34. For at least their respective dependency, and for the additional features recited, the combination of Masaji and Yamakoshi also does not render obvious claims 14, 15, 35, 41, 44, 47, 50, 53 and 56.

v. Conclusion

In view of the above, the combination of Masaji and Yamakoshi does not render obvious claims 5-8, 10-15, 17, 23-25 and 27-29 and 31-56. Withdrawal of the rejection is respectfully requested.

B. Masaji In View Of Minoru Kanda

Claims 5-17, 23-25 and 27-56 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji in view of Minoru Kanda (JP 2002-260899). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji as applied to claims 5, 8, 11, 13, 27, 29, 32, 34 and their respective dependent claims is incorporated herein by reference.

The Patent Office alleges that Masaji describes all of the features of the rejected claims except a conductive plate. The Patent Office alleges that Minoru Kanda remedies the deficiencies of Masaji in this regard.

However, Minoru Kanda does not remedy the above deficiencies of Masaji discussed in sections II.(B) and III.(A) above. Minoru Kanda is merely cited for describing a conductive plate. Thus, the combination of Masaji and Minoru Kanda does not render obvious claims 5-8, 10-15, 17, 23-25 and 27-29 and 31-56.

Withdrawal of the rejection is respectfully requested.

C. Masaji Or Yamakoshi In View Of Minoru Kanda Or Majima Hiroshi

Claims 13-17 and 34-35 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Minoru Kanda or Majima Hiroshi (JP 2000-058465). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji, Yamakoshi and Minoru Kanda as applied to claims 13 and 34 and their respective dependent claims is incorporated herein by reference.

The Patent Office alleges that Masaji and/or Yamakoshi in combination with Minoru Kanda describe all of the features of claims 13 and 34 except that the impedance elements are variable impedance. The Patent Office relies on Majima Hiroshi as allegedly remedying this deficiency of Masaji, Yamakoshi and Minoru Kanda.

However, Majima Hiroshi does not remedy the above deficiencies of claim 13 (and the similar features of claim 34) regarding a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the

capacitor are located close to the projected portion and a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit.

Thus, Majima Hiroshi does not remedy the deficiencies of Masaji, Yamakoshi and Minoru Kanda, and the combination of Masaji, Yamakoshi, Minoru Kanda and Majima Hiroshi does not render obvious claims 13 and 34.

Claims 14, 15 and 17 depend from claim 13 and claim 35 depends from claim 34. For at least their respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi, Minoru Kanda and Majima Hiroshi also does not render obvious claims 14, 15, 17 and 35.

Withdrawal of the rejection is respectfully requested.

D. Masaji Or Yamakoshi In View Of Majima Hiroshi or Choi

Claim 17 was rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Majima Hiroshi or Choi (U.S. Patent Application Publication No. 2002/0023718). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji, Yamakoshi and Majima Hiroshi as applied to claims 13 and 17 is herein incorporated by reference.

The Patent Office alleges that Masaji and/or Yamakoshi describe all of the features of claim 17 except that the impedance element is variable impedance. The Patent Office relies on Majima Hiroshi and Choi as allegedly remedying this deficiency of Masaji and Yamakoshi.

However, neither Majima Hiroshi nor Choi remedy the above deficiencies of claim 13 regarding a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit

includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and (2) a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit.

Thus, Majima Hiroshi and Choi do not remedy the deficiencies of Masaji and Yamakoshi, and the combination of Masaji, Yamakoshi, Majima Hiroshi and Choi does not render obvious claim 17.

Withdrawal of the rejection is respectfully requested.

E. Masaji Or Yamakoshi In View Of Nakamura

Claims 18-21 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Nakamura (JP 2001-094485). Applicants respectfully traverse this rejection.

Claims 18-19 are canceled and the rejection of these claims is moot. However, because features of claims 18-19 are included in claim 13, the rejection is address below.

The above discussion with respect to Masaji and Yamakoshi applied to claim 13 is herein incorporated by reference.

The Patent Office admits that neither Masaji nor Yamakoshi describe a pick-up coil or a bridge rectifier with a capacitor to measure power. The Patent Office alleges that Nakamura remedies these deficiencies of Masaji and Yamakoshi.

Nakamura does not remedy the deficiencies of Masaji and Yamakoshi. First, there is no reason or rationale for one of ordinary skill in the art to have combined Nakamura with Masaji or Yamakoshi. Nakamura describes a contactless communication unit, which is very different from Masaji and Yamakoshi.

Claim 13 requires, among other features, placing the pick-up coil and the capacitor close to the projected portion outside the of the vacuum chamber. This feature of claim 13

provides benefits such as avoiding erosion of the pick-up coil and the capacitor due to the generated plasma.

Nakamura does not describe a "projected portion outside the of the vacuum chamber," nor does Nakamura describe "plasma." Thus, Nakamura does not provide any reason or rationale for one of ordinary skill in the art to have come to the features of claim 13 that require the measurement unit including a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion. Thus, Nakamura does not remedy the deficiencies of Masaji and Yamakoshi.

For at least the above reasons, the combination of Masaji, Yamakoshi and Nakamura does not render obvious claim 13.

Claims 20 and 21 depend from claim 13. For at least its respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi and Nakamura also does not render obvious claims 20 and 21.

Withdrawal of the rejection is respectfully requested.

F. Masaji Or Yamakoshi In View Of Koji Oku

Claim 22 was rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Koji Oku (JP 08-162291). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji and Yamakoshi as applied to claim 13 is herein incorporated by reference.

The Patent Office alleges that Masaji and Yamakoshi describe all of the features of claim 22 except a mixer for voltage and current signals to measure power.

However, Koji Oku does not describe, or provide any reason or rationale for one of ordinary skill in the art to have come to, at least the features of claim 13 that require a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and (2) a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit. Koji Oku does not remedy the deficiencies of Masaji and Yamakoshi, and the combination of Masaji, Yamakoshi and Koji Oku thus does not render obvious claim 13.

Claim 22 depends from claim 13. For at least its respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi and Koji Oku also does not render obvious claim 22.

Withdrawal of the rejection is respectfully requested.

G. Masaji Or Yamakoshi In View Of Kojin Nakagawa

Claims 27-28 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Kojin Nakagawa (JP 08-325759). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji and Yamakoshi applied to claims 27-28 is herein incorporated by reference.

The Patent Office alleges that both Masaji and Yamakoshi describe all of the features of claims 27 and 28 except controlling plasma by regulating antenna length. The Patent Office introduces Kojin Nakagawa to allegedly remedy the deficiencies of Masaji and Yamakoshi.

However, Kojin Nakagawa does not remedy the deficiencies of Masaji and Yamakoshi with respect to claim 27 regarding antennas being arranged on each of the four sidewalls of the vacuum chamber and surrounding the vacuum chamber. Thus, the combination of Masaji, Yamakoshi and Kojin Nakagawa does not render claim 27 obvious.

Claim 28 depends from claim 27. For at least its respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi and Kojin Nakagawa also does not render obvious claim 28.

Withdrawal of the rejection is respectfully requested.

H. Masaji Or Yamakoshi In View Of Dible

Claims 13-16, 18 and 34-35 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Dible (U.S. Patent No. 6,042,686). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji and Yamakoshi applied to claims 13 and 34 and their respective dependent claims is herein incorporated by reference.

Dible does not remedy the deficiencies of Masaji and Yamakoshi. Dible does not describe or provide any reason or rationale for one of ordinary skill in the art to have come to a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit, as required by claim 13 (or the similar features associated with claim 34). Thus, the combination of Masaji, Yamakoshi and Dible does not render claims 13 or 34 obvious.

Claims 14 and 15 depend from claim 13 and claim 35 depends from claim 34. For at least their respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi and Dible also does not render obvious claims 14, 15 and 35.

Withdrawal of the rejection is respectfully requested.

I. Masaji Or Yamakoshi In View Of Dible And Further In View Of Nakamura

Claims 19-22 and 34-35 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Dible and further in view of Nakamura (JP 2001-094485). Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji, Yamakoshi, Dible and Nakamura applied to claims 13 and 34 and their respective dependent claims is herein incorporated by reference.

As discussed above, none of Masaji, Yamakoshi, Dible and Nakamura describe, or provide any reason or rationale for one of ordinary skill in the art to have come to a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit, as required by claim 13 (or the similar features associated with claim 34). Thus, the combination of Masaji, Yamakoshi, Dible and Nakamura does not render obvious claims 13 or 34.

Claims 21 and 22 depend from claim 13 and claim 35 depends from claim 34. For at least their respective dependency and for the additional features recited, the combination of Masaji, Yamakoshi, Dible and Nakamura also does not render obvious claims 21, 22 and 35.

Withdrawal of the rejection is respectfully requested.

J. Masaji Or Yamakoshi In View Of Dible And Further In View Of Koji Oku

Claim 22 was rejected under 35 U.S.C. §103(a) as allegedly being obvious over Masaji or Yamakoshi in view of Dible and further in view of Koji Oku. Applicants respectfully traverse this rejection.

The above discussion with respect to Masaji, Yamakoshi, Dible and Koji Oku applied to claim 13 and 22 is herein incorporated by reference.

As discussed above, none of Masaji, Yamakoshi, Dible and Koji Oku describe, or provide any reason or rationale for one of ordinary skill in the art to have come to a measurement unit for measuring a voltage or current of each RF antenna, wherein the measurement unit includes a pick-up coil that is located in proximity to an RF antenna that has a projected portion projecting to an outside of the vacuum chamber and is capable of detecting a current of the RF antenna within its proximity, wherein the measurement unit includes a capacitor, and wherein the pick-up coil and the capacitor are located close to the projected portion and a controller for setting the variable impedance value on the basis of the voltage or current measured with the measurement unit, as required by claim 13. Thus, the combination of Masaji, Yamakoshi, Dible and Koji Oku does not render obvious claim 13.

Claim 22 depends from claim 13. For at least its respective dependency, and for the additional features recited, the combination of Masaji, Yamakoshi, Dible and Koji Oku also does not render obvious claim 22.

Withdrawal of the rejection is respectfully requested.

IV. **Concluding Remarks**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 5-8, 10-15, 17, 20-25, 27-29 and 31-56 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff
Registration No. 27,075

Andrew B. Whitehead
Registration No. 61,989

JAO:ABW/hs

Date: August 3, 2009

OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

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